Objections to the Drawings

In the Office Action the drawings were objected to under 37 C.F.R. §1.83(a). Specific claimed features of the invention were objected to as not being shown in the drawings. Applicant respectfully submits that each of the identified features are present in the drawings.

By way of background, here are how certain of the figures relate to each other. Figure 1 shows a microprocessor (101) and a correlator unit (102). Figure 2 shows elements of the correlator unit including the channel matrix (3). Figure 3 provides details of the channel matrix including P-code units (42-28). Figure 6 provides details of the dual frequency channel portions of the channel matrix and Figure 15 provides details of the P-code unit. Figure 14 shows W code and Y code estimation. Please note that reference to demodulation in the application comprises the spreading of a spread spectrum signal. See, specification, page 8, lines 8-10. We now turn to the specific elements noted in the Office Action.

A delay line is shows as delay line 91 in Figure 15. In addition, taps included in a delay line are shown in Figure 8 as delay line 52. The taps are specifically mentioned on page 21, lines 11-16 of the specification. Further, a delay line with taps is a conventional feature and its detailed illustration is not essential for a proper understanding of the invention.

A first demodulator for demodulating one of the L1 and L2 signals with a non delayed version of the know code and a second demodulator selectively connectable to any one of the taps of the delay line for modulating the other of the L1 and L2 signals with the delayed version of the replica of the known code are shown in Figure 6 as correlators 317 and 327, respectively. The operation of those correlators is explained in the specification on page 19, lines 24-26.

An example of a switch for selectively switching as recited in claims 8 and 16 is shown in Figure 15 as item 95.

In addition, an example of a first integrator is shown in Figure 13 as primary accumulator 1 and box 84L1, a second integrator is shown as a primary accumulator 1 in box 84L2 of Figure 13, a correlator is indicated as item 86 in Figure 13, a comparitor is indicated as item 864 in Figure 14, a combiner is indicated as item 865 in Figure 14, a first accumulator is shown as a secondary accumulator 1 in box 84L1 of Figure 13 while a second accumulator is shown as secondary accumulator 2 in box 84L2 of Figure 13. An example of a phase adjuster for

adjusting the phases of the locally generated P-code replicas is shown and described in connection with Figure 15. One portion of the phase adjuster includes delay line 91.

Each of the foregoing examples of the elements depicted in the figures are only provided as purposes of example and are not intended to be read into the claims.

In view of the foregoing, Applicant respectfully requests that the objections to the drawings be withdrawn.

Objections to the Specification

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. Applicant respectfully submits that antecedent basis is provided by the specification for the claimed subject matter.

It appears that the limitations cited in this objection are the same limitations cited in the objection to the drawings. Therefore, for the same reasons cited above in response to the objections to the drawings, Applicant respectfully submits that each of the cited limitations finds support in both the specification and the drawings. In addition, Applicant respectfully submits the terms and phrases used in the claims find clear support in the description such that the meaning of the terms in the claims are ascertainable by reference to the description.

Claim Objections

In the Office Action claims 8 and 16 were objected to. By the foregoing amendments each of the instances noted by the Examiner have been corrected. In addition, minor amendments of form have also been made to claim 8.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that the subject matter of claims 8-10 and 16-21 are allowed. Applicant believes that the foregoing remarks and amendments have addressed each of the objections raised by the Examiner and that its claims are now in condition to pass to issuance.

CONCLUSION

The Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. Accordingly, amendments to the claims, the reasons therefor, and arguments in support of the patentability of the pending claim set are presented above. Any claim amendments which are not specifically discussed in the above remarks are made in order to

improve the clarity of claim language, to correct grammatical mistakes or ambiguities, and to otherwise improve the capacity of the claims to particularly and distinctly point out the invention to those of skill in the art. In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is specifically requested. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to initiate the same with the undersigned.
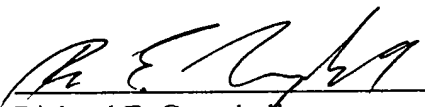
The specific changes to the amended claims are shown on a separate set of pages attached hereto and entitled **VERSION WITH MARKINGS TO SHOW CHANGES MADE**, which follows the signature page of this Amendment. On this set of pages, the insertions are underlined while the [deletions are enclosed within brackets].

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 12/7/02

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Please amend Claim 1 as follows:

8.   (Amended)   An apparatus for processing L1 and L2 spread spectrum signals received from at least one satellite of a global positioning system, wherein each of the spread spectrum signals includes a unique frequency carrier with a known pseudo-random known code modulated thereon, comprising:

a generator for generating a single replica of the known code;

a delay line connected to the generator, the delay line having a plurality of taps wherefrom the known code replica is available at different relative phases thereof;

a first demodulator connected to the generator for demodulating one of the received L1 and L2 signals with the single replica of the known code without any substantial delay;

a second demodulator selectably connectable to any one of the taps of the delay line for demodulating the other of the received L1 and l2 signals with a delayed replica of the known code[,]; and

a switch for selectably switching the other of the received L1 and [l]L2 signals for demodulation by the [first]second demodulator, and to switch the one of the received L1 and L2 signals for demodulation by the [second]first demodulator.

16.   (Amended)   A method of processing L1 and L2 spread spectrum signals received from at least one satellite of a global positioning system, wherein each of the signals includes a unique frequency carrier with a known pseudo-random code modulated thereon, comprising the steps of:

locally generating a single replica of the known code;

applying the single replica of the known code to a delay line having a plurality of taps wherefrom the code replica is available at different relative phases thereof;

demodulating one of the received L1 and L2 signals with the single replica of the known code without any substantial delay;

demodulating the other of the received L1 and L2 signals with the generated replica of the known code from one of the taps of the delay line; and

switching the demodulation using the not substantially delayed single replica of the known code to the [other]one of the received L1 and L2 signals and demodulating the [one]other of the received L1 and L2 signals with a generated replica of the known code from one of the taps of the delay line.